

Working with Doculam

How to use this heatshrink film to cover balsa model aircraft.

Written by Barry Scollay



Introduction:

Doculam, or to give it its correct name, Document Laminating Film, is a thin clear plastic film with a heat activated glue applied to one side. It's used to cover paper and especially cardboard to give it that glossy appearance. It can come in many thicknesses and surface

finishes. I use films that are approximately 30 microns thick. Glossy Doculam can be used to cover framework where you want to leave the airframe visible after covering. It can actually be seen easily enough in flight, even if the model is completely see-through.

For painted finishes, a matt finished Doculam is preferred, as the paint sticks better to it. This material is called "Soft Touch" laminating film. Paint sticks to it brilliantly, without using vinegar and wire wool to "key" the surface and accept paint like the gloss Doculam needs.

The one thing that working with Doculam needs is an Iron that can work at higher temperatures. I typically use between 150 Degrees C, and 250 Degrees C to work with and shrink Doculam. I modified a digital temperature controlled soldering iron to do the job, by making a solid brass iron shoe for the end. This modified Iron can be seen in the photo below...I use this for covering and shrinking all my models in Doculam.



Using the Doculam:

Tooling

I always begin covering by having the following tools handy to use...

Sharp scissors, scalpel with a new blade to cut the film. Tweezers to help with working the film. Sharpie marker pen to mark the film to aid cutting. Steel rule to assist working the film and of course measurement. The aforementioned Iron should be placed where it can be

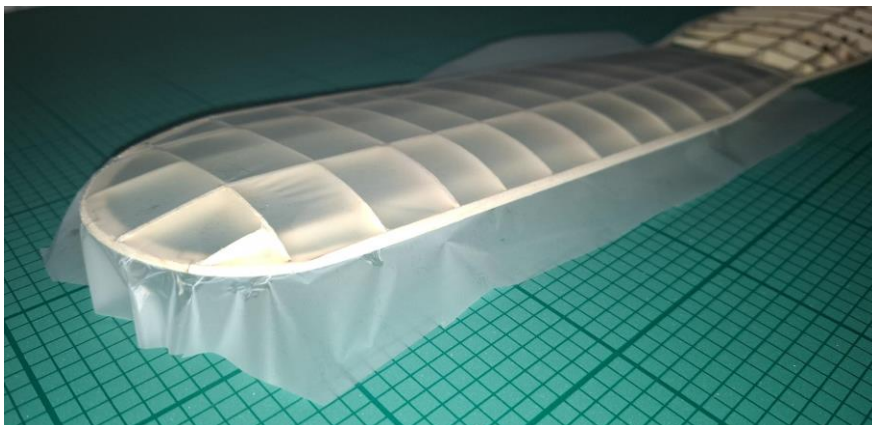
easily used and set down safely when working with the model. Good lighting is also a must, as clear film can be difficult to see at times.

Covering:

To begin covering, first cut a piece of Doculam that's slightly oversized compared to the piece to be covered. See photo below...



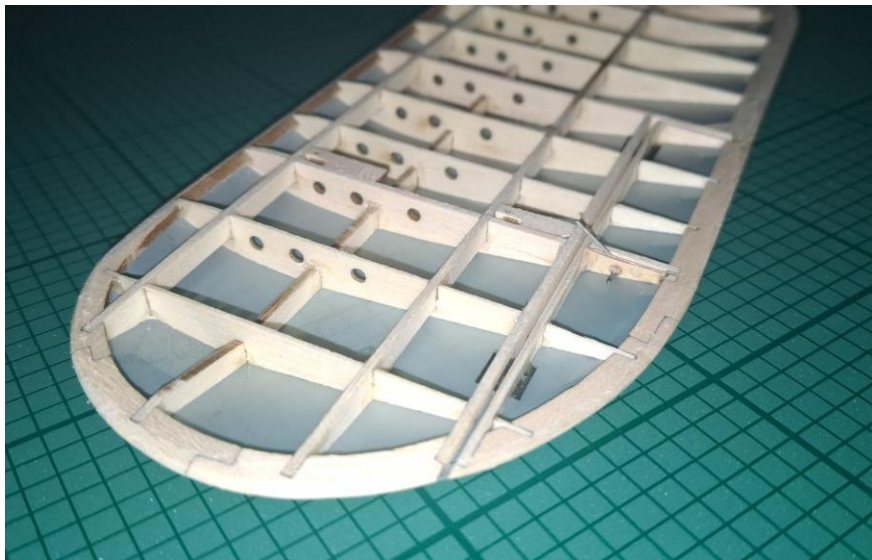
Begin attaching the film by tacking the film in place at the 4 "corners" of the framework, then half the distance between these tacks, and add another spot tack there until the film is completely attached all round the edges. Keep the film tight as possible while doing this to ensure less shrinking is needed for the final finish.



Flip the framework over and trim round the edges, leaving a few mm to wrap around the edge and iron flat, like the photo below...



When ironed flat, it should look like this...

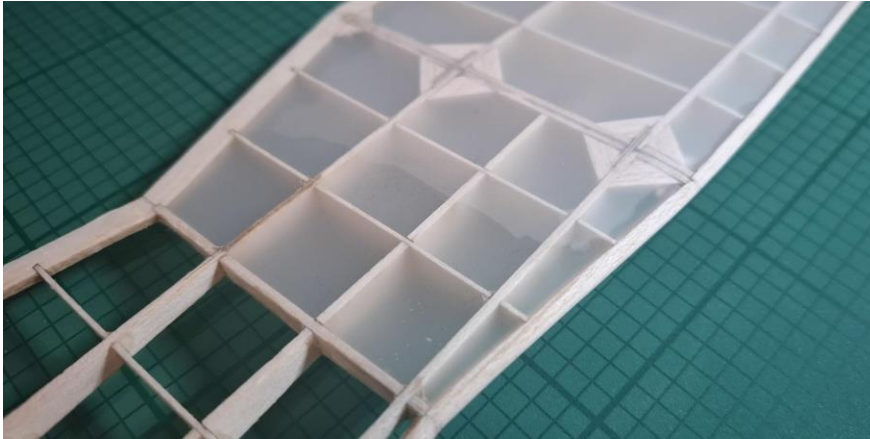


Then this process can be repeated to cover the bottom of the framework, but instead of wrapping the edges over, just cut around the framework and seal the edges down all round.

At this point the unshrunk and unattached centre sections of the film can be attached to the ribs and stringers, working on opposing sides at the same time to make sure that the framework doesn't pull off to one side and warp. If a wing or tail was to warp however,

application of heat to both sides with a heat gun at the same time to warm the covering, and twist the framework back into shape then hold until cool will resolve the issue.

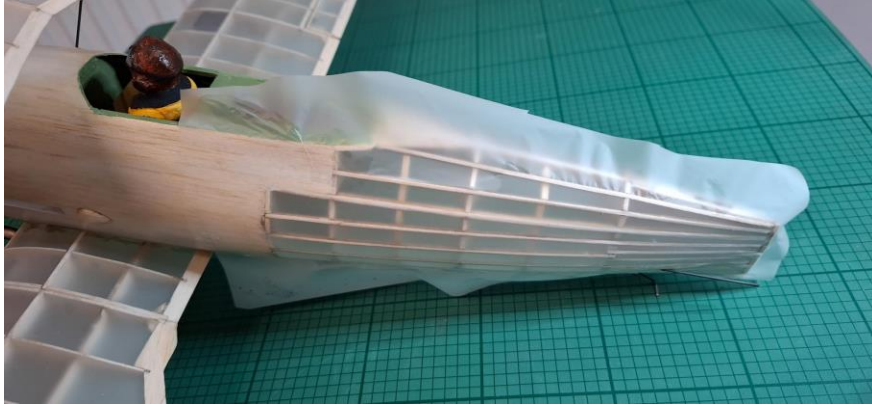
The shrunk and attached film should link like these pics below...



Fuselage covering:

To cover the fuselage is very similar, but the shape is usually more complex. Here we have to pull and stretch the film more as we tack it into position. Start at the widest point, usually the cockpit area of the fuselage, and work out towards either end. In this pic it's only the rear fuselage that needs covering, but it's the same procedure.

Cut the film as before, and tack it to the fuselage as shown below...



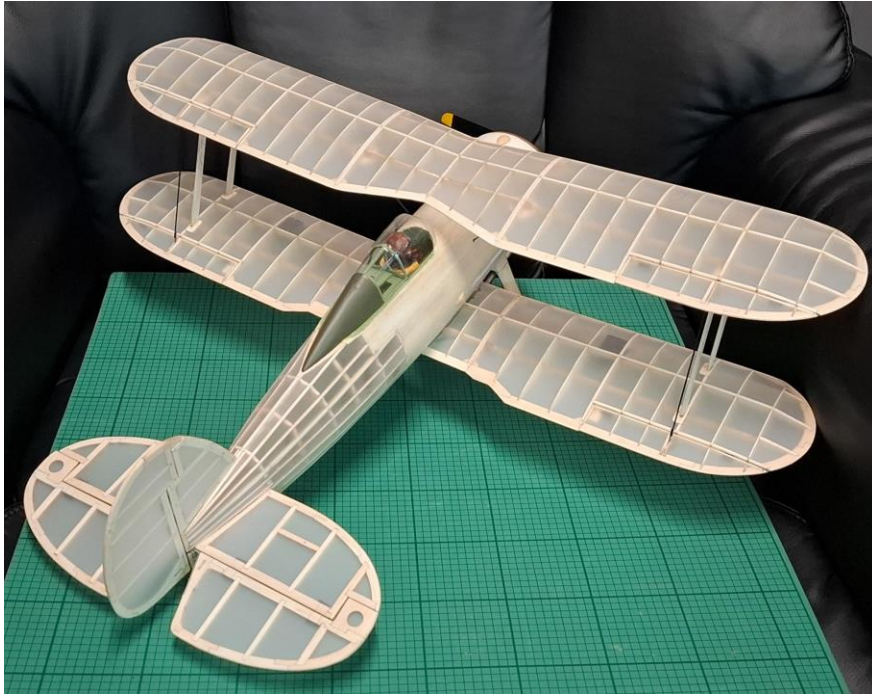
Once tacked in place, it can be sealed all round the edges as before, but leave the centre unshrunk and unattached to the stringers. Trim the excess at the top and bottom central stringers, ready to apply the other side. This is where the procedure changes.

Attach the opposite side at the centre stringer, halfway down the side of the model. This way, the film can be pulled to the top and bottom join areas and marked using Sharpie dots to mark the few mm overlap and where to pre trim the film. See pic below...



Once trimmed, attach the top and bottom join lines as before, then proceed to attach and shrink the centre areas until the covering is tight and wrinkle free.

The covered and assembled airframe can be seen in the photo below, ready to accept the chosen paint or finish, or even flown as it is.



Painting Doculam:

I finish my Doculam covered models in a few ways. Either using spray paints from rattle cans, airbrushing , or brush painting using acrylic paints. My favourite is the Tamiya range of matt paints, brushed on.

Decals are then made and applied, before the whole model is sprayed using matt acrylic lacquer to both seal in the decals and underlying paint, and also to unify the surface finish so it all looks the same.

I hope this article was helpful.

Barry Scollay.